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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/939,316	08/24/2001	John T. Nordberg	2753.01US02	3885

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EXAMINER

PALABRICA, RICARDO J

ART UNIT	PAPER NUMBER
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3641

DATE MAILED: 03/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/939,316

Applicant(s)

NORDBERG, JOHN T.

Examiner

Rick Palabrica

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 January 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4, 7-15, 17-20, 22, 24, 26, 28 and 29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-15, 17-20, 22, 24, 26, 28 and 29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. Applicant's amendment and response to the 9/17/02 Office Action in Paper No. 11 is acknowledged.

2. The amendment is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material, which is not supported by the original disclosure, is as follows:

- a. Deletion of the statement, "It is believed that", on page 36, line 12.
- b. Deletion of the statement, "If the reactor core 101 can be engineered to have enough strength, heat dissipation capability, and current carrying capability – greater than the rate at which energy is released by the fission burn – then it would be possible to contain the plasma until the fusion fuel is almost totally consumed," on page 59, lines 24-27.

Applicant is required to cancel the new matter in the reply to this Office Action.

3. Applicant traversed the objection to the specification in the previous Office Action on the grounds that that they are more of the nature of manufacturing specifications for a preferred embodiment of the invention. This is unconvincing because the applicant has not even shown an operative embodiment of his claimed invention.

The applicant recites his invention as a “new method and apparatus for the commercial production of electricity through the use of a nuclear fusion reactor.” The term “commercial production of electricity” implies large-scale, sustainable and reliable generation of electrical power capable of supplying the energy needs of households and industry that would be in the power scale of megawatts. As stated in the previous Office Action, the specification is replete with **statements of unknowns, statements of belief, statements of needs to fill information gaps, statements of intent or plans, and assumptions of success contingent upon success of other factors.** By applicant’s own statements, which were listed as items a) to p) on pages 8 – 10 of the previous Office Action, there is a clear lack of **operative embodiment** for the claimed invention. Applicant attempted to overcome the objection with respect to said items a) to p) by either: a) proposing to delete his statements that are clear admission of said lack; or b) making a statement that the item is commonly done or currently used in inertial confinement nuclear reactors.

Applicant’s arguments are unconvincing. With respect to argument a), applicant has not provided a justifiable basis for deletion of the offending statements, and even if this were the case, such deletions would constitute new matter (see section 2 above). With respect to argument b), those statements have no probative value because they are not supported by actual proof or evidence, i.e. it constitutes no more than uncorroborative statements of the applicant. They also beg the issue of why the applicant would make such statements in the specification that imply the lack of an operative embodiment. Additionally, the claimed invention is **more than** inertial

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confinement, as stated above. The invention is directed to commercial electricity generation from nuclear fusion, as repeatedly emphasized in the disclosure (e.g., see the specification on page 4, last paragraph; page 5, lines 5+; page 7, lines 5+; page 9, lines 11+ and 16+; page 91, penultimate paragraph; page 102, last paragraph). The claims recite features of a system that are clearly directed to electricity production. For example, claims 4, 14 and 22 recite "means operably connected to at least one of said conducting spheres for inductively extracting electrical energy." Claim 15 recites the limitation, "coil arrangement selectively operably coupled to a power grid for said means for extracting electrical energy." Underlining provided.

The applicant refers to "inertial confinement" in said traverse, but the specification repeatedly refers to a different type of confinement for his invention, i.e., "spherical magnetic confinement" (see page 1, 2<sup>nd</sup> paragraph; page 5, second full paragraph; page 36, 2<sup>nd</sup> paragraph; page 37, last paragraph).

In section 4 below, the examiner will identify statements by the applicant in the specification, beyond those listed in the previous Office Action, that further demonstrate the lack of an operating embodiment.

With respect to the other objections to the specification on pages 3-8 of the previous Office Action, again the applicant used the "its common knowledge in the art" argument in his traverse. In addition to the inertial confinement art mentioned above, the applicant mentioned such non-nuclear art as gasket design, cement manufacturing, padding manufacturing, and high-Tesla coils. The statements have no probative value because they are not supported by actual proof or evidence. Also, while these non-

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nuclear artisans may be conversant in their art, it is unclear from the disclosure how and in what manner the components they produce for the claimed invention would meet the stringent requirements in the nuclear fusion art. For example, material impurities could be critical to a fusion process, and they have to be adequately controlled. Also, the disclosure is non-enabling as to the critical aspects of the integration of all the different components of the system, some of which are to be made by non-nuclear artisans.

Additionally, the applicant proclaims his invention as being novel and the "first to offer inexpensive, practically unlimited, almost totally clean energy." See page 5, lines 24+. He even distinguishes his invention as being better than other well-known fusion systems (see pages 7-9 of the specification). For example, he claims that Tokomaks, Spherical Tokomaks, Stellarators, RFP devices and FRC devices all suffer in instability and containment unlike his invention. Z-pinch devices have no external spherical electromagnetic confinement fields and there is no attempt to extract energy from these devices using these fields and the MHD process, unlike his invention. The MAGO device makes no attempt to extract energy from the fusion burn via MHD, unlike his invention. MTF devices destroy the confinement device with each pulse, unlike his invention.

A final, novel and outstanding characteristic of applicant's invention to distinguish it from the above fusion devices is highlighted on page 92<sup>nd</sup> full paragraph, where he states:

**"Whatever the precise merits, features and advantages of the above references and the hundreds, if not thousands, of attempted variations on these references, no fusion device has achieved or fulfilled the purpose of providing**

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**more nuclear energy output than was put into the device with the exception of the hydrogen bomb."**

The fusion devices mentioned by the applicant have taken years and enormous resources to achieve their present state of development. The hydrogen bomb required a large team of scientists and engineers, as well as extensive research to develop. Based on the comparison made by the applicant of his invention with these high technology systems, it is highly unlikely that an artisan in the art would be enabled to exercise the invention because of the paucity of information in the specification regarding the novel, claimed system to generate commercial electrical energy from nuclear fusion.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

### ***Specification***

4. The specification is objected to under 35 U.S.C. 112, first paragraph, as failing to provide an adequate written description of the invention and as failing to adequately teach how to make and/or use the invention, i.e., failing to provide an enabling disclosure.

The claimed invention is an apparatus **for commercial production** of electricity by nuclear fusion. However, there is no adequate or enabling disclosure of how such could be accomplished using the applicant's invention.

The disclosure appears to only set forth a theoretical concept of commercial production of electrical power by nuclear fusion, without any specific instructions, etc. on how such is to be actually accomplished. This view is supported by the failure to set forth a full example of the parameters of an operative apparatus for such power production. One cannot rely on the skill in the art for the selection of the proper quantitative values to present an operative system based on applicant's theories and concepts since these theories and concepts have not been fully and adequately disclosed. See *Bank v. Rauland Corp.*, 64 USPQ 93, *In re Corneil et al.*, 145 USPQ 697.

As stated in section 3, the stated purpose of the invention is to produce commercial electricity by using the nuclear fusion process and spherical electromagnetic confinement.

The objection is based on the same reasons as set forth in section 2 of the 9/17/02 Office Action, as set forth in section 3 above, and the reasons below.

The following are additional statements made by the applicant in the disclosure that further demonstrate the lack of an operating embodiment:

- 1) "To summarize, an initial core 101 could be designed as such:" (page 17).
- 2) "Neutral elementary particles such as neutrons may have enough energy to penetrate the spherical magnetic confinement field." (page 17).



- 3) "The second non-conducting layer 123 is likely manufactured as" (page 18).
  - 4) "The third non-conducting layer 124 is likely manufactured as" (page 18).
  - 5) "The fourth non-conducting layer 125 is likely manufactured as" (page 19).
  - 6) "The seventh non-conducting layer 127 is likely manufactured as" (page 20).
  - 7) "Initially, the fusion reactors built on these designs would probably have one reactor core 101 per electrical circuit." (page 79).
  - 8) "An example of this type of wall – with a thicker third conducting layer 124 might look like:" (page 88).
  - 9) "One technique for tapping the correct amount of energy from the circuit might be.. " (page 97).
- Among some of the basic items that are not disclosed in the specification are as follows: In order to generate commercially a unit of electrical power, e.g., one megawatt, a) what size of fuel pellets, e.g., for D-T reaction would be required; b) what is the rate at which these pellets have to be introduced into the core; c) what size of core would be required; d) what size of conducting spheres would be required; e) how much power would be needed for the drive coils; f) how does one remove the unwanted fusion products from inside the core and how often should they be removed so as not to affect the process; g) how long can the core be expected to last before it is replaced; etc.

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

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Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 1-4, 7-15, 17-20, 22, 24, 26, 28 and 29 are rejected under 35 U.S.C. 101 because the claimed invention as disclosed is inoperative and therefore lacks utility.

The reasons the invention as disclosed is inoperative are the same as the reasons set forth in section 4 above as to why the disclosure is objected to, and said reasons are incorporated herein.

There is no factual evidence to show that the invention is operative.

#### ***Claim Rejections - 35 USC § 112***

6. Claims 1-4, 7-15, 17-20, 22, 24, 26, 28 and 29 are rejected under 35 U.S.C. 112, first paragraph, for the reasons set forth in the objection to the specification in section 4 above.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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7. Claims 1-3, 20, 24 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by any one of Priest (U.S. 4,354,999) or Lasche (U.S. 4,735,762) or Hendry (U.S. 5,139,731).

Priest shows a spherical plasma confinement apparatus in Figs. 1 and 2. There is a reactor core containing fusionable material (15), a plurality of conducting spheres arranged adjacent to each other and adjacent to the core (24, 12), and a spherical Ioffe bar magnetic system.

Lasche discloses a fusion reactor with direct electric generation by magnetic flux compression. He describes an embodiment in Fig. 2 of a spherical reactor chamber 84 containing a pair of beam ports for firing a laser beam containing liquid lithium (see column 13, lines 33+). Applicant's claim language "plurality of conducting spheres" reads on spherical blanket 32 around the fusion target (see Fig. 2) and spherical mold of two hemispheres for forming the target (see column 7 lines 36+ and Fig. 24). There is a spherical magnetic field produced by two half-turn electromagnets (see column 7, lines 37+).

Applicant's claim language reads on the apparatus of Hendry shown in Fig. 2. a spherical cyclotron volume 12 containing hydrogen ions and two cylindrical spheres 14 and 34 adjacent to each other and these two spheres are located inside the volume 12. There is a spherical magnetic field to bend the ion beam through its path in the cyclotron volume (see column 5 lines 30+). Applicant's claim language: a) "nuclear fusion reactor" reads on cyclotron; b) "reactor core" reads on cyclotron volume 12; c) "fusionable material" reads on hydrogen ions; d) "plurality of conducting spheres" read

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on ion source volume 14 and pumping volume 24; e) "means for initiating electromagnetic field " reads on magnetic field of cyclotron. Note that there will inherently be fusion of some of the hydrogen ions inside the cyclotron volume.

The claims are replete with statements that are essentially method limitations or statements of intended or desired use. For example, the "wherein" clauses in claims 2 and 3, "operably connected to" (e.g., see claims 1 and 4), etc. These clauses, as well as other statements of intended use do not serve to patently distinguish the claimed structure over that of the reference. See In re Pearson, 181 USPQ 641; In re Yanush, 177 USPQ 705; In re Finsterwalder, 168 USPQ 530; In re Casey, 152 USPQ 235; In re Otto, 136 USPQ 458; Ex parte Masham, 2 USPQ 2<sup>nd</sup> 1647.

See also MPEP 2114 that states:

A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647.

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531.

Apparatus claims cover what a device is, not what a device does." Hewlett-Packard Co. v. Bausch & Lomb Inc., 15 USPQ2d 1525, 1528.

Any one of the cited references disclose an apparatus that has the capability to the operated in the same manner a to achieve the same use as recited in said claims.

8. Claim 7 is rejected under 35 U.S.C. 102(b) as being anticipated by Hendry.

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9. Claims 4, 14, 15, 17 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Lasche. Note that Lasche discloses his invention induces a pulse of electric energy that is first stored kinetically, capacitively or inductively and then released smoothly to the power grid (see column 8, lines 44+).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 4, 14, 15 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Priest, as applied to claims 1-3, 20, 24 and 26 above, and further in view of Whittlesey (U.S. 3,378,446). Priest discloses the applicant's claims except for the extraction of electrical energy.

Whittlesey discloses an apparatus using lasers to trigger thermonuclear reactions. He teaches the use of the thermonuclear plasma explosion to generate electric energy by reaction against magnetic fields surrounding the focal region where the explosion is generated (see column 1 lines 59+).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus, as disclosed by Priest, to include a means for inductively extracting electrical energy, to gain the advantages

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thereof (e.g., additional utility of the device), because such modification is no more than the inclusion of a well-known means for extracting useful energy from nuclear fusion.

### ***Conclusion***

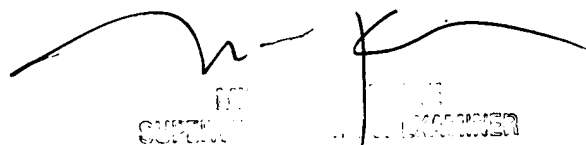
11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Reference E further illustrates prior art.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rick Palabrica whose telephone number is 703-306-5756. The examiner can normally be reached on 8:00-4:30, Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone can be reached on 703-306-4198. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7687 for regular communications and 703-305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

RJP  
March 11, 2003



Two handwritten signatures are present. Below the first signature is a rectangular stamp with the text "EXAMINER" and "SUPERVISOR" (partially obscured). Below the second signature is a rectangular stamp with the text "EXAMINER" and "SUPERVISOR" (partially obscured).